



1-4. (Cancelled)

5. (Previously Presented) A cooling assembly comprising:
- an electronic package having a cavity;
  - at least one die with active electronics components mounted using compliant interconnects within the cavity; and
  - at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,
- wherein the compliant interconnects are coupled between each die and the package,
- and
- wherein said compliant interconnects comprise spring contacts.
6. (Previously Presented) The cooling assembly of claim 5, wherein said spring contacts comprise contacts formed using lithography, the spring contacts comprising multiple layers of material.
7. (Previously Presented) A cooling assembly comprising:
- an electronic package having a cavity;
  - at least one die with active electronic components mounted using compliant interconnects within the cavity; and
  - at least one coolant port that allows a coolant to enter the cavity an directly cool the active electronic components of each die,
- wherein the compliant interconnects are coupled between each die and the package,
- and

wherein each die has at least one active surface, and when the coolant circulates in the cavity the coolant directly cools each active surface of each die.

8. (Previously Presented) A cooling assembly comprising:

an electronic package having a cavity;

at least one die with active electronic components mounted using compliant interconnects within the cavity; and

at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,

wherein the compliant interconnects are coupled between each die and the package, and

wherein each die has a plurality of surfaces within the cavity including at least one active surface associated with respective active electronic components, and when the coolant circulates in the cavity the coolant directly cools each surface of each die, thereby reducing thermal gradients or hot spots on each active surface of each die and increasing the operating range of each die.

9-15. (Cancelled)

16. (Previously Presented) A cooling assembly comprising:

an electronic package having a cavity;

at least one die with active electronic components mounted using compliant interconnects within the cavity; and

at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,

wherein the compliant interconnects are coupled between each die and the package,  
and

wherein said package further comprises a bottom substrate on one side of the cavity,  
wherein each die with active electronic components is connected to the bottom substrate by  
the compliant interconnects, and wherein the active electronic components face the bottom  
substrate and contact coolant surrounding the compliant interconnects within the cavity.

17. (Currently Amended) ~~The~~ A cooling assembly ~~of claim 16~~ comprising:

an electronic package having a cavity;

at least one die with active electronic components mounted using, wherein said  
~~compliant interconnects comprise~~ first and second sets of compliant interconnects  
within the cavity, wherein the compliant interconnects are coupled between each die and the  
package;

at least one coolant port that allows a coolant to enter the cavity and directly cool the  
active electronic components of each die, and

wherein said package further comprises a top substrate; and a bottom substrate,  
wherein each die with active electronic components is connected to the bottom substrate by  
the compliant interconnects, and wherein the active electronic components face the bottom  
substrate and contact coolant surrounding the compliant interconnects within the cavity, and  
further comprising alignment posts wherein the alignment posts are attached to the bottom  
substrate, the first set of compliant interconnects is being coupled between each die and the  
bottom substrate, and the dies ~~are~~ being further held in place by contact with the alignment  
posts and downward pressure from the second set of compliant interconnects.

18-19. (Cancelled)

20. (Previously Presented) A cooling assembly comprising:
- an electronic package having a cavity;
  - at least one die with active electronic components mounted using compliant interconnects within the cavity; and
  - at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,
- wherein the compliant interconnects are coupled between each die and the package,
- and
- wherein said package further comprises a top substrate with a top surface representing an exterior surface of the package and wherein the top surface includes contacts, whereby external components can be electrically coupled to each die via the contacts.
21. (Previously Presented) A cooling assembly comprising:
- an electronic package having a cavity;
  - at least one die with active electronic components mounted using compliant interconnects within the cavity; and
  - at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,
- wherein the compliant interconnects are coupled between each die and the package,
- and
- wherein said package further comprises:
- a top substrate;
  - a bottom substrate; and
  - interconnection elements that provide electrical paths extending through the top substrate and the bottom substrate.

22. (Cancelled)

23. (Previously Presented) A cooling assembly comprising;

an electronic package having a cavity; and

at least one die with active electronic components mounted using compliant interconnects within the cavity;

at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,

wherein the compliant interconnects are coupled between each die and the package; and

a coolant circulation system coupled to said at least one coolant port, wherein the coolant circulates within the package and directly contacts all surfaces of each die to directly cool active electronic components during their operation.

24. (Previously Presented) A cooling assembly comprising:

an electronic package having a cavity;

at least one die with active electronic components mounted using compliant interconnects within the cavity; and

at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die,

wherein the compliant interconnects are coupled between each die and the package;

a cooling member; and

one or more heat radiators, wherein each die is immersed in the coolant and each heat radiator transfers heat generated by each die from the coolant to said cooling member.

25. (Previously Presented) A cooling assembly comprising;

an electronic package having a cavity;  
at least one die with active electronic components mounted using compliant interconnects within the cavity; and  
at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronics components of each die,  
wherein the compliant interconnects are coupled between each die and the package;  
and  
at least one non-contacting compliant interconnect coupled to a surface of said at least one die, whereby, heat can be further directed away from the surface of a die.

26. (Previously Presented) A cooling assembly comprising:

an electronic package having a cavity;  
at least one die with active electronic components mounted using compliant interconnects within the cavity; and  
at least one coolant port that allows a coolant to enter the cavity and directly cool the electronic components of each die,  
wherein the compliant interconnects are coupled between each die and the package,  
and  
wherein said package further comprises:  
a top substrate; and  
a bottom substrate,  
wherein each die is flip-chip bonded to said top substrate.

27-31. (Cancelled)

32. (Previously Presented) The cooling assembly of claim 5, wherein said spring contacts comprise contacts formed using lithography.

33. (Previously Presented) A cooling assembly comprising:  
an electronic package having a cavity;  
compliant interconnects secured on first ends to a surface of a substrate provided in the cavity;  
at least one die with electronic components non-rigidly mounted on second ends of the compliant interconnects within the cavity so that the compliant interconnects do not insert into the at least one die; and  
at least one coolant port that allows a coolant to enter the cavity to contact the at least one die to cool the die.